

Application No. 10/720,617
Attorney Docket No. 2003B125

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REMARKS

Claims 1-15, 19-21, and 31-32 remain under consideration by the Examiner. Reconsideration in view of the further amendment and response are respectfully requested.

35USC112 2nd Paragraph Rejection of Claims 1-10

These claims were rejected because the deposition of precursors requires a support. Claim 1 is amended to remove the word "optionally" so as to cure this issue. Reconsideration and removal of the rejection are requested in view of the amendment which recites active components combined with a support.

35USC103(a) Rejection of Claims 1-10 and 31-32 over Moser et al. U.S. Patent No. 6,514,904 ("Moser")

These claims were again rejected over Moser for its disclosure of rhodium and optionally indium in a catalyst within the claimed ranges. The Response to Remarks indicated that the claims are directed to a catalyst consisting essentially of the rhodium and indium components. Note that amended claim 1 requires that the catalyst active components consist of these metal components, on a support.

Applicants respectfully traverse because the claims require that the active components of the catalyst consist of a rhodium component and an indium component at the prescribed levels; there is no teaching in Moser to select the prescribed range of components from the prescribed precursors without also using the many suggested optional components of Moser such as halogen, post metal deposition calcinations, another platinum group metal, etc.

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The skilled artisan is required to go far beyond the typical skill level to obtain the proper components at the claimed levels so as to provide a catalyst capable of selectively hydrogenating alkynes and diolefins. All of this is asked of the skilled artisan while still preparing the catalyst of Moser so as to have the defined crush strength and X-ray diffraction pattern sought by Moser. All of this is asked of the skilled artisan, without any recognition of the problem green oil makes in such processes. Notably, Moser lacks any teaching of deposition from indium nitrate. Moser merely leads the skilled artisan to prepare a spherical alumina, regardless of what materials, if any, are placed thereon.

Not only would the skilled artisan have to navigate a myriad of optional selections to obtain the components, ranges, and the precursors of the claim, but she would have to purposely not select certain components *contrary to the explicit teaching of Moser*. Chlorine is excluded by the claim but strongly recommended by Moser. See the disclosure of Moser at column 6, lines 20-54 where Moser recommends certain halide precursors so that some halide will also be present as an active ingredient. See also column 5, lines 50-57 wherein HCl is recommended for uniform distribution of the metals.

Note also that the support of Moser is probably a tin-containing one, such as provided in Moser's Example 1. It is unknown by the skilled artisan whether such support is useable for any process other than that disclosed by Moser.

Finally, there is no suggestion that the Moser catalysts are effective for a hydrogenation consumption process (as now recited in claim 1) rather than a hydrogen production process as taught by Moser. Reconsideration and withdrawal of the rejection are respectfully requested.

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35USC103(a) Rejection of Claims 1-15, 19-21, and 31-32 over Robinson et al. U.S. Patent No. 4,522,935 ("Robinson")

Robinson was cited for overlapping the claimed ranges. Applicants respectfully traverse because the claims now precisely define the active components and Robinson requires the presence of tin and halogen and nothing suggests to the skilled artisan to exclude such materials. Furthermore, nothing suggests that either of these references would be effective for the selective hydrogenation of alkynes and diolefins to olefins. Reconsideration and withdrawal of the rejection are respectfully requested.

35USC103(a) Rejection of Claims 1-15, 1 and 19-21 over Moser in view of Robinson

Robinson is combined with Moser for Robinson's disclosure of indium nitrate, lacking in Moser. Applicants' respectfully traverse because the skilled artisan is nowhere taught to exclude the tin and halogen of Robinson when combining with Moser. Furthermore, these two references were clearly designing catalysts for processes far afield from the selective hydrogenation of alkynes and diolefins to olefins. The problem of green oil reduction, e.g., was not even recognized by these references so there is nothing to lead the skilled artisan to select appropriate components for catalyst of the process.

In summary, prima facie obviousness had not been established because nothing discloses or suggests exclusion of tin and halogen and nothing suggests the precursor of Robinson be used with certain selected supports and components of Moser to arrive at the invention. Even if a prima facie case were considered to be established, the efficacy of the catalyst system of the invention for selective hydrogenation overcomes such case. Nothing in the references suggests a catalyst possessing the characteristics of the claimed invention.

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CONCLUSION

Reconsideration and allowance of the amended claims is respectfully requested. If any points remain in issue that the Examiner feels may be best resolved through a telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

If necessary to effect a timely response, this paper should also be considered as a petition for an Extension of Time sufficient to effect a timely response. Please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1712 (Docket #: 2003B125).

Respectfully submitted,

Date:

December 7, 2006



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